



News from the Savannah River National Laboratory

Media Contacts:

Clemson University:

Karl B. Kelly
(864) 993-1981
karl@clemson.edu

SRNL:

Angeline French
(803) 725-2854
angeline.french@srnl.doe.gov

FOR IMMEDIATE RELEASE

Clemson, SRNL collaborate to reduce state dependence on oil



CLEMSON, S.C. (Oct. 15, 2008) – To reduce the Southeast's dependence on oil, Clemson University will lead a \$1.2 million bioethanol research project to find the best way to produce plant-based fuels in the region.

The U.S. Department of Energy awarded the grant to Clemson, which will collaborate with DOE's Savannah River National Laboratory in Aiken. The purpose of the grant is to assess the potential of switchgrass and sweet sorghum as "feedstocks" — plants used as fuel — that can be processed into ethanol. The grant also will fund development of a small-scale biofuel processing plant at

Clemson University's Restoration Institute in North Charleston.

The pilot plant is designed to "scale up" new biofuel technologies, a crucial step between small laboratory experiments and full-scale production. The facility could assist energy producers interested in energy-crop bases in the Southeast to build regional ethanol-production facilities.

Regionally, research at the pilot plant could be an economic-development asset. South Carolinians use more than 2.5 billion gallons of gasoline every year, all of which comes from out of state. Producing enough plant-based ethanol to replace 20 percent of South Carolina's fuel use could create thousands of jobs and add \$2 billion to the state economy, according to the report "Breaking the Biological Barriers to Cellulosic Ethanol" produced by the U.S. Department of Energy in June 2006.

-more-

We Put Science To Work™

A U.S. Department of Energy National Laboratory managed and operated by

SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC
AIKEN, SC USA 29808 • SRNL.DOE.GOV

Environmentally, DOE scientists estimate that current biofuels already have prevented 13 million tons of greenhouse gases from being released into the atmosphere. The next varieties of plant-based biofuels from non-food sources, like the ones that are the focus of South Carolina's research initiative, have potential for significant environmental and economic benefits.

Ethanol made from cellulosic feedstocks, such as switchgrass, or agricultural residues such as corn stover, has the potential to reduce greenhouse gas emissions by as much as 86 percent compared to gasoline. Biofuels have the added benefit of providing a "carbon sink." As crops grow to produce the feedstocks for making the biofuel, they absorb carbon dioxide from the atmosphere, according to the DOE Energy Efficiency and Renewable Energy Web site.

Switchgrass could become a significant source for ethanol fuel produced in South Carolina, producing as much as 800 to 1,000 gallons of ethanol per acre. Even more striking, the energy-return ratio could be as high as 10 for switchgrass, compared with 0.81 for gasoline.

The South Carolina Bioenergy Research Collaborative has been formed to demonstrate the economic feasibility of using plants, such as switchgrass, trees and sorghum, to make ethanol. The collaborative includes scientists at Clemson, the Savannah River National Laboratory, South Carolina State University and industry incubator SC Bio, as well as industrial partners who are committed to building a biofuels-research pilot plant in the state.

A group of Clemson and USDA-Agriculture Research Service scientists, led by agronomist Jim Frederick, is investigating switchgrass production systems at the Pee Dee Research and Education Center in Florence, including soil and crop management, new variety development and measuring environmental impacts.

For more information, contact Frederick, 843-662-3526, jfrdrck@clemson.edu or see <http://agroecology.clemson.edu/switchgrass/sg.htm>.